



United States Environmental Protection Agency
Washington, DC 20460

Work Assignment Number
0-12

Work Assignment

☒ Original ☐ Amendment Number:

Contract Number
EP-W-10-002

Contract Period
Base ☒ Option Period Number

Title of Work Assignment
Design Feasibility Study for Innovations in
Building Repurposing through Vertical
Farming

Contractor
INDUSTRIAL ECONOMICS INC.

Specify Section and Paragraph of Contract SOW

Purpose: ☒ Work Assignment Initiation ☐ Work Assignment Close-Out
☐ Work Assignment Amendment ☐ Incremental Funding
☐ Work Plan Approval

Periods of Performance
From 09/24/10 To 11/18/11

Comments

The purpose of this action is initiate Work Assignment 0-12 and to request a Work Plan from the Contractor.

☐ Superfund

Accounting and Appropriations Data

☒ Non-Superfund

| Line | DC (Max 5) | Budget/FYs (Max 4) | Appropriation Code (Max 6) | Budget Org/Code (Max 7) | Program Element (Max 9) | Object Class | Amount | (Dollars) | (Cents) | Site/Project (Max 8) | Cost Org/Code (Max 7) |
|------|---------------|-----------------------|-------------------------------|----------------------------|----------------------------|-----------------|--------|-----------|---------|-------------------------|--------------------------|
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Authorized Work Assignment Ceiling

Contract Period Cost/Fee LOE
Previously Approved

This Action

Total \$0.00 536

Work Plan / Cost Estimate Approvals

Contractor WP Dated Cost/Fee LOE

Cumulative Approved Cost/Fee: \$0.00 LOE 536

Work Assignment Manager Name

PAMELA K. SWINGLE

(Signature)

(Date)

Branch/Mail Code 1805T

Phone Number 404-562-8482

Fax Number 404-562-8269

Project Officer Name

CATHERINE J. TURNER

(Signature)

(Date)

Branch/Mail Code 1805T

Phone Number 202-566-0951

Fax Number 202-566-3001

Other Agency Official Name

(Signature)

(Date)

Branch/Mail Code

Phone Number

Fax Number

Contracting Official Name

BRADLEY R. AUSTIN

(Signature)

(Date)

Branch/Mail Code 3803R

Phone Number 202-564-5574

Fax Number 202-565-2560

Contractor Acknowledgement of Receipt and Approval of Workplan (Signature and Title)

Date

Design Feasibility Study for Innovations in Building Repurposing through Vertical Farming

Contract: EP-W-10-002, Work Assignment: 0-12

Summary Information

Title: Design Feasibility Study for Innovations in
Building Repurposing through Vertical Farming

Period of Performance: From: 09/24/10
To: 11/18/11

Award Date:

Total Funding:

Procurement Management Roles

WORK ASSIGNMENT MANAGER:

U.S. E.P.A.
Attn: PAMELA K. SWINGLE
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Attachments

Attachment Name

Design Feasibility Study for Innovations in Building Repurposing
through Vertical Farming

Design Feasibility Study for Innovations in Building Repurposing through Vertical Farming

Contract: EP-W-10-002, Work Assignment: 0-12

Work Assignment SOW

Title: Design Feasibility Study for Innovations in Building Repurposing through Vertical Farming

Contractor: IEc, Inc. **Contract No.:** EP-W-10-002

Work Assignment Number: 0-12

Estimated Period of Performance: **Phase I:** Approval to November 18, 2010
Phase II: November 19, 2010 to November 18, 2011

Estimated Level of Effort: Phase I: 9 hours
Phase II: 527 hours

Key EPA Personnel:

Work Assignment COR (WA COR):

Pamela Swingle
EPA Region 4, OPPI
404-562-8482
404-562-8269 (fax)

Contract Level COR: Cathy Turner
CMG/OPEI (1805T)
202/566-0940
202/566-3001 (fax)

Background and Purpose:

The City of Charleston, South Carolina is collaborating with local stakeholders on a Smart City market transformation program that includes a green roof, building energy management system and electric vehicle charging station on the roof of a municipal building. The financing for Smart City is secured and construction will commence in summer 2010. As part of the Smart City Charleston project, the City is interested in developing the first municipally driven urban vertical farm in the country, called Sprout City South. The City has a number of underutilized or empty buildings and would like to initiate a design feasibility study to develop a vertical farm within the City using existing building stock. This innovative approach (page 1-3, para. 2, line 7 of contract SOW) would demonstrate the functionality and triple bottom line value of a typical urban underutilized structure by converting it into an ecological asset, primarily through the addition of a vertical farm. Based on existing research, no vertical farms have successfully been transformed from concept and design into an *actual* functioning vertical farm. This will be a showcase project for the southeast and the entire nation on how communities can revitalize urban neighborhoods and buildings without demolition and create new gains in green economy and green infrastructure.

Services shall consist of:

The contractor shall produce a "design feasibility" study for the innovation project involving a vertical farm in the City of Charleston, South Carolina. This shall be accomplished by working with the City to

Design Feasibility Study for Innovations in Building Re-purposing through Vertical Farming

Contract: EP-W-10-002, Work Assignment: 0-12

identify available existing building stock and determining the best buildings for the vertical farm. The analysis shall consist of identification of building design features for vertical farming, working with local stakeholders and obtaining their feedback, and identifying other market variables to ensure viability of the vertical farm.

Design Feasibility Study Qualifications:

Contractor staff performing this work shall demonstrate interdisciplinary expertise in the following areas:

- green building;
- architecture;
- community facilitation and design charrettes;
- agriculture and horticulture; and
- market analysis; and
- experience with existing or historic work with the City of Charleston.

This work assignment does not duplicate tasks in any existing work assignments.

Quality Assurance (QA) Requirements

Check ☐ Yes or ☒ NO, if the following statement is true or false. The Contractor shall submit a written Quality Assurance Project Plan for any project that is developing environmental measurements or a Quality Assurance Supplement to the Quality Management Plan for any project which generates environmental data using models with their technical proposal.

Work Assignment CORs will provide additional information here, if **Yes** is checked above.

Tasks and Deliverables:

The WA COR will review all deliverables in draft form and provide revisions and/or comments to the contractor. The contractor shall prepare the final deliverables incorporating the WA COR's comments.

Contractor personnel shall at all times identify themselves as Contractor employees and shall not present themselves as EPA employees. Furthermore, they shall not represent the views of the U.S. Government, EPA, or its employees. In addition, the Contractor shall not engage in inherently governmental activities, including but not limited to actual determination of EPA policy and preparation of documents on EPA letterhead.

Phase I:

Task 1 - Prepare Work plan

The contractor shall prepare a work plan for **Phase I and Phase II within** 15 calendar days of receipt of a work assignment signed by the Contracting Officer. The work plan shall outline, describe and include the technical approach, resources, timeline and due dates for deliverables, and a detailed cost estimate by task and a staffing plan. The WA COR, Contract Level COR and the CO will review the work plan. However, only the CO can approve/disapprove the work plan. The contractor shall prepare a revised work plan incorporating the Contracting Officer's comments, if required.

Design Feasibility Study / Innovations in Building Re-purposing through Vertical Farming

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- 1a. Workplan within 15 calendar days of receipt of work assignment.**
- 1b. Revised workplan within 7 calendar days of receipt of comments from the Contracting Officer, if required.**

Phase II:

Task 2 - Design Feasibility Analysis Study Outline [Element 2: Testing Innovations, page(s) 1-9 SOW, paragraph 2]

The Contractor shall prepare a design feasibility study for the City of Charleston. The Contractor shall work with the City of Charleston (under Technical Direction from the WA COR) to identify existing underutilized building stock that could be potential sites for the vertical farm. The analysis will be an interdisciplinary analysis, which focuses on agriculture, horticulture, green building and architectural potential of the sites. The design feasibility analysis shall result in the identification of at least one primary building for the development of the vertical farm.

The design feasibility analysis shall include a kick-off conference call with the Contractor, the WA COR and the City of Charleston. The WA COR will provide the Contractor with potential dates and times of the conference call. The target date for the kick off conference call is mid-December 2010.

Deliverables and schedule under Task 2

- 2a.** Kick off conference call, upon technical direction of the WAM, within 60 days of completion of Task 1.
- 2b.** Draft outline of the design feasibility study within 75 days of kick off conference call.
- 2c.** In support of this task, the contractor shall perform other related work (e.g., facilitation, identifying appropriate stakeholders, direct communications with stakeholders) as directed by the WA COR in written technical direction.

Task 3 Stakeholder Design Charrettes [Section 3, Element 4: Encouraging broad-scale application of innovations, page(s) 1-13 SOW, paragraph 3]

Prior to development of the first draft of the feasibility study; the Contractor shall work with the City to conduct up to 3 design charrettes with stakeholders. EPA Region 4 will provide some note-taking support and logistical support (e.g., helping to secure the location of the charrettes), to help design, facilitate and collect lessons learned from the charrettes. If EPA Region 4 is unable to provide the note-taking and logistical support, the contractor shall supply these services under technical direction from the WA COR.. The charrettes will be used to gather key stakeholder groups from around the City and to obtain feedback on potential locations and buildings for the vertical farm. Feedback from the design charrettes shall be incorporated into the first draft of the feasibility study. The contractor shall prepare a comprehensive summary report of the findings and lessons learned from all of the charrettes.

Deliverables and schedule under Task 3

- 3a.** The contractor shall organize and host up to 3 stakeholder charrettes for up to 50 participants (at each charrette) at dates and times that are mutually agreed upon by the WA COR and Contractor.
- 3b.** The contractor shall work with the WA COR to organize logistics for the charrettes and provide note-taking and logistical support for the charrettes.

Design Feasibility Study for Innovations in Building Resilience through Vertical Farming

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3c. The contractor shall provide charrette summary results to the WA COR within 20 calendar days of the completion of the charrettes.

3d. The Contractor shall conduct a de-brief with the WA COR and other identified stakeholders (to be identified by the WA COR) within 30 calendar days of the workshop with EPA Region 4 on the results of the charrettes and next steps to incorporate the charrette results into the draft feasibility study. The contractor shall prepare a summary report of the findings and lessons learned from the charrettes that shall be used for the debriefing.

3e. In support of this task, the contractor shall perform other related work (e.g., note-taking, facilitation and logistics for the charrettes and debriefing) as directed by the WA COR in written technical direction.

Task 4 Design Feasibility Study [Section 3, Element 4: Encouraging broad-scale application of innovations, page(s) 1-13 SOW, paragraph 3]

The Design Feasibility Study draft document shall follow the outline developed under Task 2 and incorporate the findings of the charrettes under Task 3. The contractor shall develop one draft of the study, which will be sent out for review and comment to a stakeholder team. The contractor shall incorporate the feedback received into the report and finalize the report. The contractor shall develop a power point presentation of the final study. EPA Region 4, along with other identified stakeholders (to be identified by EPA Region 4) will present the finalized study to the City and other stakeholders as appropriate.

Deliverables and schedule under Task 4

4a. The contractor shall develop for stakeholder review a draft of the design and feasibility study.

4b. The contractor shall incorporate feedback and comments received into the final report and develop a final study within 30 days of receipt of stakeholder comments. The final study shall be delivered to the WA COR electronically.

4c. The contractor shall provide a power point presentation of the final study electronically to the WA COR upon direction from the WA COR.

4d. In support of this task, the contractor shall perform other related work (e.g., attending meetings, presenting information on the study and facilitation) as directed by the WA COR in written technical direction.